

B1
concl'd

an aperture disposed on the output end of the focusing element so as to substantially block unfocused halo-producing X-rays, while allowing substantially complete transmission of focused X-rays.

B2

7. (Amended) An aperture in an X-ray fluorescence system comprising;

a first end;

a second end; and

a passage connecting the first end and the second end, the first end connectable to an X-ray focusing element comprising capillary optics of the X-ray fluorescence system, the aperture to substantially block unfocused halo-producing X-rays in the X-ray fluorescence system.

B3

36. (Amended) An X-ray path in a microscopic X-ray fluorescence system, the path comprising:

an X-ray source;

an X-ray focusing element comprising capillary optics having an input end and an output end, the input end vacuum sealed to the X-ray source;

a focusing aperture vacuum sealed to the second end of the focusing element so as to substantially block unfocused halo-producing X-rays, while allowing substantially complete transmission of focused X-rays; and

a vacuum source connectable to the X-ray path for evacuating the path.

B4

38. (Amended) An X-ray fluorescence system comprising:

a detector for detecting fluorescence from a sample to be irradiated at or around atmospheric conditions; and

an aperture cooperating with the detector to provide an X-ray path, the X-ray path having X-ray transmissive characteristics that differ from atmospheric X-ray transmissive characteristics at or around the fluoresced sample.

B4
concl'd

50. (Amended) An aperture in an microscopic X-ray fluorescence system comprising:

an input end;

an output end;

an X-ray transparent vacuum seal at the output end; and

a tapered through passage connecting the input end and the output end, the through passage having a wider input end and a narrower output end, the input end connectable to an X-ray focusing element of the X-ray fluorescence system, the aperture to substantially block unfocused X-rays in the X-ray fluorescence system.

B6

55. (Amended) An X-ray fluorescence system comprising:

a detector; and

an aperture cooperating with the detector to provide an X-ray path, the X-ray path having X-ray transmissive characteristics that differ from atmospheric X-ray transmissive characteristics,